

Passwords on Crack, and Rule-Based Attack Methods



Project Title	Passwords on Crack, and Rule-Based Attack Methods
Project Summary	This project is broken into several tasks or mini-projects to include command line programming, producing password lists, research and learn various password cracking and rule-based attack methods, ultimately producing efficient passphrase generation techniques.
Country	United States

Project Description

Interns will research and learn some password cracking methodologies using programming languages and rule-based attack methods of open source tools. Interns will develop a command line program, that outputs to a text file, a user-defined passphrase consisting of all possible combinations of two or more word lists. Interns will expand on these word lists as they research and learn how to develop efficient approaches to generate passphrases with two or more base words. This project includes multiple tasks that build upon each other and will produce the most efficient methods, rules, and rule languages to generate passphrases.

Required Skills or Interests

Skill(s)
Analytical writing
Coding
Data analysis
Editing and proofreading
Research

Additional Information

Additional Skills include:

- Efficient in C, C++, Python, algorithms, data structures, Jupyter Notebook
- Strong interest in password cracking, crypto mining, cryptography

- Experience in combinatorics, Markov chains, Levenshtein distance (also called “Edit Distance”), pairwise string alignments, probability, statistics

Required Tools (Agency will not provide - available online):

- PACK (Password Analysis and Cracking Toolkit)
- PRINCEprocessor Hashcat Utility
- John the Ripper
- Hashcat
- Python 3

Language Requirements

None